Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Expanding Flexible Use of the	)	GN Docket No. 18-122
3.7 to 4.2 GHz Band	)	

To: The Commission

COMMENTS OF
THE OPEN TECHNOLOGY INSTITUTE AT NEW AMERICA

Michael Calabrese
Wireless Future Project
Open Technology Institute at New America
740 15th Street NW, Suite 900
Washington, D.C. 20005

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COMMENTS OF THE PUBLIC INTEREST SPECTRUM COALITION

The Open Technology Institute at New America ("OTI") hereby submits these comments in response to the Commission's May 3d *Public Notice* in the above-captioned proceeding.[1]

INTRODUCTION AND SUMMARY

OTI continues to strongly support the overarching goal of the Commission's *NPRM*, which at its most basic is to ensure that *all 500 megahertz* of today's grossly underutilized C-band are put to work to both fuel America's 5G future as well as to close the rural broadband divide. The *NPRM*'s clearing and sharing proposals each represent an essential component of a potential win-win-win solution that achieves three vital public interest outcomes: First, to enable fixed wireless providers to bring high-speed broadband access to rural and other underserved areas; second, to reallocate a substantial portion of the band available for mobile 5G networks; and third, to protect incumbent Fixed Satellite Services (FSS) licensees from undue disruption or harmful interference. OTI and the Public Interest Spectrum Coalition (PISC) continue to strongly support this balanced approach that includes a public auction for the portion of the band that can

[1] Public Notice, *Expanding Flexible Use of the 3.7 GHz Band*, GN Docket No. 18-122, DA 19-385, 84 Fed. Reg. 25514 (rel. May 3, 2019).

be cleared of FSS and, across the entire band, coordinated shared access to unused spectrum for high-capacity, fixed wireless point-to-multipoint (P2MP) services.

In response to this *Public Notice*, OTI reiterates what PISC and so many diverse parties have already stated on the record: The authorization of a private auction or sale would violate Section 309(j) of the Communications Act and willfully ignore Congressional intent and precedent. Congress has twice passed legislation ensuring that when the TV bands at 700 MHz and 600 MHz were consolidated for auction, local broadcast stations would either receive no windfall (the 2002 Auction Reform Act) or receive at most incentive payments limited by a competitive reverse auction (the 2012 incentive auction bill). The Commission has no legal authority to authorize, let alone oversee, a private auction. General provisions such as Sections 303(c), 303(r) and 4(i) cannot possibly provide the authority for a public or private auction that is not consistent with the explicit provisions of Section 309(j).

The private auction proposed by the C-Band Alliance is also likely to distort competition in the mobile market by excluding smaller ISPs and other potential entrants. Incumbents have a strong incentive to maximize their windfall rather than the broader public interest. Moreover, a private sale would set a dangerous precedent, suggesting that incumbent licensees should always wage maximum resistance against giving up or sharing unused spectrum unless the Commission agrees to give them *all* the public revenue that until now has always, with few exceptions, flowed back to the public, as Section 309(j) clearly intends.

The speediest, most straightforward option consistent with the Commission's statutory authority is a traditional forward auction that consolidates FSS incumbents into the upper portion of the band and requires auction winners to reimburse incumbents for any eligible and reasonable costs. Unlike a private auction, which would clearly violate Section 309(j), the courts have

consistently upheld the Commission's authority to reorganize bands, modify licenses, and authorize mechanisms that reimburse incumbents' costs. There is strong precedent from multiple prior proceedings to support license conditions that require winning bidders to shoulder the costs of relocating FSS incumbents and to voluntarily negotiate reasonable premium payments, as needed, to incumbents in exchange for expedited clearance.

Facilitating this approach is the fact that receive-only earth stations possess neither the "station license" necessary to have Title III rights cognizable under Section 316, nor the "licensed spectrum usage rights" necessary to be eligible to receive incentive auction payments authorized by Section 309(j)(8)(G). Following a Commission order that reduces the range of C-band frequencies on which FSS operates, new fixed service entrants (*viz.*, the fixed point-to-multipoint deployments contemplated in the NPRM) would continue to be required to coordinate shared use of the band in a manner that avoids harmful interference to C-band incumbents.

Further facilitating a traditional auction and band reorganization here is the fact that the courts have repeatedly upheld the Commission's broad authority under Section 316 to modify licenses at any time provided the agency makes a public interest finding and does not fundamentally change the license. Reducing the range of C-band frequencies in which space stations are guaranteed interference protection would not represent a "fundamental change" in their rights, provided that satellite operators are able to continue operating essentially the same service. Changing or reducing the frequencies used by a licensed service is a type of modification the Commission has ordered multiple times in the past.

Finally, OTI and PISC strongly support the Commission's proposal to end the antiquated "full-band, full-arc" coordination policy that allows FSS earth stations to reserve exclusive use of the entire 3.7 GHz band without regard to actual use. The effective warehousing of vacant

spectrum that results from full-band, full-arc coordination violates basic principles of spectrum management, particularly now that mid-band spectrum is scarce and perfectly suited to provide faster and more affordable fixed wireless broadband in underserved areas.

I. The Commission Lacks Legal Authority to Authorize a Private Auction

As OTI and the Public Interest Spectrum Coalition (PISC) have previously explained in comments and reply comments filed in this proceeding, a private auction or sale would violate Section 309(j) of the Communications Act and willfully ignore Congressional intent and precedent.[2] Congress has twice passed legislation ensuring that when the TV bands at 700 MHz and 600 MHz were consolidated for auction to mobile carriers, local broadcast stations would either receive no windfall (the 2002 Auction Reform Act) or receive at most incentive payments limited by a competitive reverse auction (the 2012 incentive auction bill). Indeed, most broadcasters received only compensation for expenses incurred to switch frequencies, an approach that would work well in the C-band if only the lower 200 megahertz are cleared, because incumbents have acknowledged that all current FSS video and radio distribution can be accommodated above 3900 MHz.

Without full transparency and close FCC supervision, a private auction is also likely to distort competition in the mobile market, excluding smaller ISPs and other potential entrants. Incumbents have a strong incentive to maximize their windfall rather than the broader public interest. Moreover, a private sale would set a dangerous precedent, suggesting that incumbent licensees should always wage maximum resistance against giving up or sharing unused spectrum

[2] *See* Comments of the Public Interest Spectrum Coalition, *Expanding Flexible Use of the 3.7 GHz Band*, GN Docket No. 18-122, at 22-32 (October 29, 2018); Reply Comments of the Public Interest Spectrum Coalition, *Expanding Flexible Use of the 3.7 GHz Band*, GN Docket No.18-122, at 25-30 (Dec. 11, 2018).

unless the Commission agrees to give them *all* the public revenue that until now has always, with few exceptions, flowed back to the public, as Section 309(j) clearly intends.

A. Section 309(j) and Clear Congressional Intent Foreclose a Private Auction

In our initial comments, OTI and PISC – along with many other parties – explained why the authorization of a private auction or private sale of C-band spectrum by incumbents would be an unlawful end-run around Section 309(j) of the Communications Act in clear contravention of Congressional intent and precedent.[3] Only a public incentive auction run by the Commission can ensure a monetary return to the public and avoid unjust enrichment.

Grossly underutilized bands can be consolidated to clear spectrum for auction, and the frequency assignments of incumbents shifted as necessary, without resorting to a private auction or an unnecessarily generous windfall at public expense. This is the path Congress chose when it *twice* enacted legislation that enabled the consolidation of TV bands to free up flexible-use spectrum in the 600 and 700 MHz bands for auction to the mobile industry.[4] Both the Auction Reform Act of 2002 and the 2012 law creating the Commission's incentive auction authority were very specifically motivated and designed to minimize private windfalls when an underutilized band (the 700 and 600 MHz bands, respectively) are consolidated to clear spectrum for public auction.[5] For example, the Auction Reform Act's findings explicitly warned against

[3] See, e.g., Comments of the Public Interest Spectrum Coalition, GN Docket No. 18-122, at 22-31 (Oct. 29, 2018) ("PISC Comments"); *Ex Parte* Letter from Elizabeth Andrion, Charter Communications, GN Docket No. 18-122 (Feb. 22, 2019); Comments of T-Mobile, GN Docket No. 18-122, at 3 (Oct. 29, 2018); DSA Comments, GN Docket No. 18-122, at 15-19 (Oct. 29, 2018); Comments of Comcast, GN Docket No. 18-122, at 23-32 (Oct. 29, 2018); Comments of Google, GN Docket No. 18-122, at 10-15 (Oct. 29, 2018); Comments of American Cable Association, GN Docket No. 18-122, at 15 (Oct. 29, 2018); Comments of Microsoft, GN Docket No. 18-122, at 11 (Oct. 29, 2018).

[4] PISC Comments at 27-31.

[5] *Spectrum Reform Act of 2002*, Pub. L. No. 107-195, 47 U.S.C. §309(j)(15)(C)(iv), available at https://www.congress.gov/bill/107th-congress/house-bill/4560/text?overview=closed; *Middle Class Tax Relief and Job Creation Act of 2012*, Pub.L. 112–96, Subtitle D—Spectrum Auction Authority, § 6402,

unnecessary payments, stating: "The Commission's rules governing voluntary mechanisms for vacating the 700 megahertz band by broadcast stations . . . should advance the transition of digital television **and must not result in the unjust enrichment of any incumbent licensee**."[6]

We won't repeat the statutory analysis and legislative history that PISC provided in the coalition's initial comments.[7] However, it bears repeating that under Section 309(j)(3) of the Communications Act, the Commission is required to promote a number of objectives in developing a competitive bidding methodology, including:

> (C) **recovery for the public of a portion of the value** of the public spectrum resource made available for commercial use **and avoidance of unjust enrichment** through the methods employed to award uses of that resource;[8]

Just seven years ago Congress gave the FCC a statutory tool specifically designed to address a situation where it would serve the public interest best to share some portion of the value of the band with incumbents that incur costs by clearing spectrum. It's safe to assume Congress did not add incentive auction authority to Section 309(j) because it intended to give the Commission the authority to give away tens of billions of dollars in public revenue with no return to the Treasury.

The incentive auction authority that Congress established in the 2012 Spectrum Act is the *legitimate* "market-based approach" that can and should be designed to work for this band.[9] Under this authority, in effect through the end of FY 2022, the Commission is authorized to

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(enacted Feb. 22, 2012), codified at 47 U.S.C. § 309(j)(8)(G) ("Spectrum Act"), available at https://www.congress.gov/112/plaws/publ96/PLAW-112publ96.pdf.

[6] *Spectrum Reform Act of 2002* at Section 2(6)(B), emphasis added.

[7] *See Comments of PISC* at 22-31.

[8] 47 U.S.C. §309(j)(3)(A) - (D), emphasis added.

[9] *See* 47 U.S.C. §309(j)(8)(G). As the *NPRM* states: Incentive auctions are a voluntary, market-based means of repurposing spectrum by encouraging licensees to compete to voluntarily relinquish spectrum usage rights in exchange for a share of the proceeds from an auction of new licenses to use the repurposed spectrum." *NPRM* at ¶ 103.

"encourage a licensee to relinquish voluntarily some or all of its licensed spectrum usage rights . . . by sharing a portion of the proceeds (. . .) from the use of a competitive bidding system . . .."[10] The "portion of proceeds" must be "based on the value of the relinquished rights as determined in the reverse auction" which, in turn, must include competing participants.[11] One problem is that while Congress just recently created this authority to facilitate relinquishing spectrum rights "*in exchange for a share* of auction proceeds," a private auction would do this in exchange for *all* of the (net) proceeds, with no return to the Treasury. Where an incentive auction is viable, the Commission should choose the methodology that comports with the statutory objective of paying only a "portion of proceeds" to licensees, particularly those that never paid for the spectrum in the first place.

The *NPRM* appears to recognize this and seeks comment on "a reverse auction for satellite transponder capacity that could be used to compensate the satellite incumbents for giving up C-band transponder capacity in order to enable the Commission to reallocate C-band spectrum to flexible use."[12] This would effectively use the reverse auction of substitute transponder capacity – enough to accommodate the earth stations cleared off the lower portion of the band – as a proxy for a reverse auction of the spectrum itself. OTI believes that a reverse auction of transponder capacity, under the Commission's incentive auction authority, would be feasible and preferable to abdicating the public's interest in a substantial portion of the value of this public resource.

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[10] § 309(j)(8)(G)(i).

[11] § 309(j)(8)(G)(ii). That limiting provision states:
The Commission may not enter into an agreement for a licensee to relinquish spectrum usage rights in exchange for a share of auction proceeds . . . unless—
(i) the Commission conducts a reverse auction . . .;
(ii) at least two competing licensees participate in the reverse auction

[12] *NPRM* at ¶ 106.

Alternatively, as section II.A below describes, the most straightforward option consistent with the Commission's statutory authority is a traditional forward auction that consolidates FSS incumbents into the upper portion of the band and requires that auction winners reimburse incumbents for any eligible and reasonable costs. Unlike a private auction, which would clearly violate Section 309(j), the courts have consistently upheld the Commission's authority to reorganize bands, modify licenses, and authorize mechanisms that reimburse incumbents' costs.

B. The Commission's General Authority Does Not Supersede Section 309(j)

At least one party has suggested in the record that the Commission "has ample authority under Sections 303(c), 303(r) and 4(i) of the Communications Act" to authorize a private sale or auction that "ensure[s] that earth station owners receive incentive-based compensation and that taxpayers, too, receive a portion of the value created by repurposing the spectrum."[13] These general provisions cannot possibly provide the authority for a public or private auction that is not consistent with the explicit provisions of Section 309(j).

Section 303(c) simply gives the Commission the general authority to allocate bands to services and to assign specific frequencies to individual users. Section 4(i) is a general provision often referred to as the 'necessary and proper' clauses of the Communications Act, while Section Sections 303(r) similarly authorizes the Commission to Sections 303(r) "[m]ake such rules and regulations . . . as may be necessary to carry out the provisions of this chapter" [Title III]. None of these general provisions address the process for assigning licenses. Nor do they address what the Commission must do when the demand for a set of initial licenses exceeds supply, a situation inherent in the nature of the exclusive, flexible-use licenses contemplated for the lower C-band.

[13] *Ex Parte* Letter from Scott Harris, Counsel to the Small Satellite Operators, GN Docket No. 18-122, at 2 (March 25, 2019).

Only one section expressly addresses the process for resolving "mutually exclusive applications" for licenses: Section 309(j). That section does not simply give the Commission the general authority to conduct auctions, it states that "the Commission *shall* grant the license . . . *through a system of competitive bidding* that meets the requirements of this subsection."[14] One of those requirements is that "all proceeds from the use of a competitive bidding system under this subsection shall be deposited in the Treasury," except to the extent Section 309(j)(8) provides an explicit exception, one of which is incentive auction payments to qualifying reverse auction participants under Section 309(j)(8)(G).[15] Even if these general provisions made any mention of competitive bidding or how to resolve competing demands for exclusive licenses (which they do not), a basic canon of statutory construction provides that if there is a conflict between a general provision and a specific provision, the specific provision prevails.[16] In short, no general provision can supersede the very specific authority and mandates that Congress spelled out in great detail in Section 309(j).

Finally, as PISC explained in its original comments, it would be clearly wrong to conclude, as the CBA urges, that a public auction is unnecessary because Section 309(j)(6)(E) obligates the Commission "to use engineering solutions, negotiations, threshold qualifications . . . and other means in order to avoid mutual exclusivity."[17] Since CBA has now proposed a private auction based on multiple rounds of sealed bids, it can no longer claim that the private sale it contemplates is some form of "negotiation" aimed at avoiding mutual exclusivity. More

[14] 47 U.S. Code § 309(j)(1).
[15] 47 U.S. Code § 309(j)(8)(A).
[16] *See, e.g.*, Antonin Scalia and Bryan A. Gardner, *Reading the Law: The Interpretation of Legal Texts* (West, 2012).
[17] Letter from Jennifer D. Hindin, Counsel, C-Band Alliance, to Marlene H. Dortch, Secretary, FCC, at 2-3, GN Docket No. 18-122 (Feb. 6, 2019).

critically, even a private, negotiated sale – let alone a private auction – is clearly not within the scope of the exceptions that Congress listed in Section 309(j)(6)(E).

Licenses for exclusive use spectrum over large geographic areas – as the Commission envisions for this band – have consistently been subject to assignment by public auction, in part because there have always been competing (and mutually exclusive) demands to use it. In contrast to CBA's claims, the Commission has taken a common sense approach to the concept of "mutually exclusive applications." In the 2015 CBRS Report and Order, referring to the need to auction Priority Access Licenses, the Commission stated that "Section 309(j)(1) provides the Commission with the obligation to conduct competitive bidding when all applicants to participate in bidding on particular licenses cannot be granted the subject licenses because at the time of application submission, the applicants seek the same license or different licenses that would interfere with each other, or when the requests for interchangeable channels exceed the available supply."[18]

It is self-evident that CBA's proposal for a private auction contemplates a competition among mutually exclusive applicants, which is both inevitable and how they plan to wrestle a windfall away from taxpayers. If the "negotiation" exception in Section 309(j) is satisfied by authorizing either a private auction or a privately-negotiated sale to avoid mutual exclusive uses of the band, then the exception swallows the rule and 309(j)(1) is rendered meaningless.

[18] *See Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, Report and Order and Second Further Notice of Proposed Rulemaking, 30 FCC Rcd 3959, at 4001-02 ¶ 130 (2015).

C. Authorizing a Private Auction Does Not Serve the Public Interest

As PISC and other parties have argued throughout this proceeding, the authorization of a private auction or sale as proposed by the CBA would represent a complete abdication of the Commission's traditional responsibility to ensure that both the reallocation and assignment of spectrum best serves the overall public interest.[19] Without full transparency and close FCC supervision, a private sale is likely to distort competition in the mobile market. Eligibility, bidding credits, band plan, license areas, anti-collusion rules, bidding procedures, and many other policy choices must be made openly and through notice and comment rulemaking. Reassignment of such a competitively critical swath of mid-band spectrum must not be outsourced to foreign companies whose interests are not aligned with the public interest, or even with FSS earth stations and American consumers, but rather with maximizing their own short-term windfall profits.

Moreover, as PISC, the Dynamic Spectrum Alliance and other parties have emphasized, authorizing a private auction or sale would set a dangerous precedent: If FSS satellite operators are given a $20 or $30 billion windfall in exchange for using a band more efficiently incumbent licensees in the future will wage all-out resistance to giving up or sharing unused spectrum unless the Commission agrees to give them the public revenue that until now has almost always been returned to the public, as Section 309(j) clearly stipulates. OTI believes that the precedent of a private sale will foreclose more efficient band sharing in particular. That is already evidenced in this proceeding. The C-Band Alliance adamantly opposes even the consideration and testing of coordinated shared use of unused capacity in the band, even in the most remote rural areas.

[19] *See, e.g.*, Comments of PISC at 28-29; Comments of Comcast, GN Docket No. 18-122, at 24 (Oct. 29, 2018); Comments of T-Mobile, GN Docket No. 18-122, at 2-4 (Oct. 29, 2018).

Another example of how the precedent of a 'private sale' could harm the public interest relates to the Commission's ability to condition licenses with public interest obligations. OTI agrees with DSA that "a private transaction in all likelihood will not include opportunistic sharing between fixed point-to-multipoint and flexible-use licensees," whereas the public promulgation of auction rules "could condition licenses on complying with a use-or-share requirement similar to the one the Commission adopted for the CBRS band."[20] If the Commission certifies an automated database system to coordinate shared use of the upper portion of the band, that same mechanism can enable opportunistic access to spectrum in the lower, flexible use portion of the band. This would be particularly valuable in rural areas. More generally, if the Commission decides that the incumbent satellite companies should decide if opportunistic sharing is feasible, it will be difficult if not impossible to adopt efficient use-it-or-share-it conditions, such as the Commission adopted as part of the 600 MHz auction rules, in the future.

II. The Commission has Clear Legal Authority to Auction 200 MHz or More, Reimburse Incumbent Costs, and Modify FSS Licenses and Registrations as Needed

The speediest, most straightforward option consistent with the Commission's statutory authority is a traditional forward auction that consolidates FSS incumbents into the upper portion of the band and requires that auction winners reimburse incumbents for any eligible and reasonable costs. Unlike a private auction, which would clearly violate Section 309(j), the courts have consistently upheld the Commission's authority to reorganize bands, modify licenses, and authorize mechanisms that reimburse incumbents' costs.

[20] Comments of Dynamic Spectrum Alliance, GN Docket No. 18-122, at 16 (Oct. 29, 2018).

There is strong precedent for the Commission to authorize winning bidders to voluntarily negotiate premium payments to incumbents in exchange for expedited clearance. Since the CBA satellite operators have conceded that 200 megahertz can be cleared within 36 months nationwide without disrupting or diminishing their current C-band business, the Commission can adopt a speedy and straightforward reorganization of the band within its existing legal authority while avoiding both an unjust windfall and a disruption of incumbent C-band services.

A. A Public Auction of 200 MHz Can Provide for Generous Reimbursement of Incumbent Costs and Does not Require Incentive Auction Payments

While there is no precedent for reallocating C-band through a private auction, the Commission has ample authority to repeat a variation on the approach it has successfully adopted – and which the courts have readily upheld – multiple times over the past two decades. In the past, when the Commission addressed similar opportunities to consolidate or relocate incumbents in an underutilized band, it relied on a traditional auction (where needed) and required winning bidders or other entrants to assume the cost of relocating incumbents whose licenses are modified to ensure "comparable facilities" on different frequencies. While the Commission has authorized winning bidders to negotiate premium payments to incumbents willing to vacate early, it has never authorized private windfalls at public expense.

One example is the framework the Commission adopted when it subdivided the 18 GHz band.[21] At that time, the 18 GHz band, like C-band today, was shared on a coordinated, co-primary basis between the Fixed Service (FS) and satellite services (FSS and MSS). The FCC decided that "separating terrestrial fixed service operations from ubiquitously deployed FSS earth stations in dedicated sub-bands would serve the public interest," enabling innovative new

[21] *Redesignation of the 17,7-19.7 GHz Frequency Band, Blanket Licensing of Satellite, etc.*, Report and Order, IB Docket No. 98-172 (rel. June 22, 2000).

digital satellite broadband services.[22] Accordingly, the Commission adopted a plan to migrate FS incumbents off the lower portion of the band and to authorize blanket licenses for what satellite entrants claimed would be "ubiquitous" deployments that could not coexist with thousands of existing FS sites.

Under the Commission's two-stage framework, during an initial two-year period the FS incumbents and satellite entrants were required to negotiate in good faith over the cost of "comparable facilities" in the upper portion of the band. FS licensees were allowed to demand a premium to relocate early, but part of the enforceable "good faith" requirement was that the premium had to be proportionate to the cost of comparable facilities. If no agreement was reached within two years, the Commission authorized satellite entrants to force the involuntary relocation of FS incumbents at any time (as needed), with satellite users required to pay actual costs for relocation up to ten years after the Order. After ten years any remaining FS incumbents were required to relocate without any cost reimbursement.[23]

Teledesic LLC challenged the Commission's authority to condition its new licenses on an obligation to pay the costs of displaced FS incumbents. The D.C. Circuit upheld the Commission's decision, noting that the FCC's "current approach to the relocation of incumbents is not new"[24] and noted the Commission's *Emerging Technologies Order* and other previous band reorganizations in which the new licensees were required absorb the cost when displaced

[22] *Id*. at ¶ 2.
[23] *Id*. at ¶ 5.
[24] *Teledesic LLC v. FCC*, 275 F.3d 75, 86 (D.C. Cir. 2001) (upholding FCC authority to require satellite operators to negotiate the payment of relocation costs of FS incumbents moved to the upper portion of the heretofore co-primary 18 GHz band).

incumbents were given "comparable facilities" aimed at ensuring no disruption of their ongoing business.[25]

More recently the Commission established rules in 2006 that required compensation for relocated Fixed Service and Broadband Radio Service incumbents through a clearinghouse paid for by new Advanced Wireless Service licensees.[26]

Similarly, in 2013 the Commission required winning bidders in the Upper H Block auction to make proportional payments to a fund previously established to pay the costs of clearing incumbents from the overall H Band.[27] The Report and Order adopted "cost-sharing formulas based on gross winning bids," stating that "the Commission has long established that cost-sharing obligations for both the Lower H Block and the Upper H Block should be apportioned on a pro rata basis against the relocation costs attributable to the particular band."[28]

B. Registered FSS Earth Stations Are Ineligible for Incentive Payments and can be Consolidated into the Upper Portion of C-band While Maintaining Coordinated Interference Protection

The *Public Notice* requests comment on the enforceable interference protection rights of registered receive-only earth stations and whether their registrations qualify as "licenses" for the purpose of Section 316 and Section 309(j)(8)(G). Receive-only earth stations that duly register and coordinate with co-primary Fixed Service (FS) licensees obtain a reliance interest in

[25] *See, e.g., Redevelopment of Spectrum to Encourage Innovation in the Use of New Telecommunications Technologies*, Third Report and Order, 8 F.C.C.R. 6589, 6594-95 (1993); *Microwave Relocation Cost Sharing Plan*, First Report & Order & Notice of Proposed Rulemaking, 11 FCC Rcd 8825 (1996); *Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for Use by the Mobile Satellite Service*, Second Report and Order, 15 F.C.C.R. 12,315, 12,352 ¶ 109 (2000).
[26] *See Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile & Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems,* Ninth Report & Order, 21 FCC Rcd 4473, at 4513-19, 4526-33 (2006); *see also* 47 C.F.R. §§ 27.1160-27.1174; 47 C.F.R. §§ 27.1176-27.1190; 47 C.F.R. §§ 27.1230-27.1239.
[27] *See Service Rules for Advanced Wireless Services H Block — Implementing Section 6401 of the Middle Class Tax Relief and Job Creation Act of 2012 Related to the 1915-1920 MHZ and 1995-2000 MHZ Bands*, Report and Order, 28 FCC Rcd. 9483, 9546-9550 ¶¶ 167-173 (2013).
[28] *Id*. at ¶¶ 167-168.

protection against harmful interference, but they do not hold a license under Title III. Consequently, receive-only earth stations possess neither the "station license" necessary to have Title III rights cognizable under Section 316,[29] nor the "licensed spectrum usage rights" necessary to be eligible to receive incentive auction payments authorized by Section 309(j)(8)(G).[30] Following a Commission order that reduces the range of C-band frequencies on which FSS incumbents operate, new fixed service entrants (*viz*., the fixed point-to-multipoint deployments contemplated in the NPRM) would continue to be required to coordinate shared use of the band in a manner that avoids harmful interference to C-band incumbents.

In 1979 the Commission adopted a deregulatory order making it clear that receive-only earth stations in C-band are ineligible for a license under Section 301.[31] Section 301 requires the Commission to issue a license to authorize the "use" of spectrum for the specific purpose of "transmission." Section 301 states: "No person shall *use or operate* any apparatus for the *transmission* of energy or communications or signals by radio . . . except under and in accordance with this Act and with a license in that behalf granted under the provisions of this Act."[32] The Commission concluded in its 1979 Order that receive-only earth stations are not "incidental" to transmission and therefore do not require a license under Section 301. The Commission reasoned, in pertinent part:

> By definition, receive-only earth stations do not transmit. While it might be argued that receiving facilities are incidental to radio transmission, the full extension of that

[29] 47 U.S. Code § 316.
[30] 47 U.S. Code § 309(j)(8)(G).
[31] *In the Matter of Regulation of Domestic Receive-Only Satellite Earth Stations*, First Report and Order, 74 F.C.C.2d 205, at ¶ 31 (1979) ("1979 Earth Station Order"). *See also Ex Parte* Letter from C-Band Alliance to Marlene H. Dortch, FCC, GN Docket No. 18-122, at 2-3 (March 7, 2019).
[32] 47 U.S.C. § 301 (emphasis added).

> argument would be unreasonable because it would require that all television and radio receivers be licensed as well as receive-only earth stations. We therefore conclude that licensing of receive-only earth stations is not mandated by the Act.[33]

Since licensing under Title III was not necessary, the *1979 Earth Station Order* adopted a voluntary registration regime. The Commission explained that it was exercising its ancillary jurisdiction under Title I to make "protection from interference available."[34] "[W]e continue to believe that the power to regulate receive-only earth stations is ancillary to our other regulatory responsibilities to maximize effective use of satellite communications."[35] If an earth station chose not to register, it would operate without interference protection. "We wish to make it very clear that *no* interference protection is afforded to unlicensed facilities,"[36]

In two later decisions, the Commission reiterated that while registration entitles receive-only earth stations to interference protection, it does not confer a license. In 1986 the Commission streamlined its voluntary licensing processes[37] and in 1991 it terminated voluntary licensing altogether and instituted voluntary registration, stating that registration would provide the same protection as the prior regime.[38] As a result, currently no receive-only earth station in the band holds a "license" and there has never been any suggestion that the Commission has changed the conclusion it reached in its1979 Order.

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[33] *1979 Earth Station Order*, 74 F.C.C.2d 205, at ¶ 31.
[34] *Ibid*.
[35] *Ibid.*
[36] *Id*. at ¶ 38.
[37] *Deregulation of Domestic Receive-Only Satellite Earth Stations*, Second Report & Order, 104 F.C.C.2d 348 (1986).
[38] *Amendment of Part 25 of the Commission's Rules and Regulations to Reduce Alien Carrier Interference Between Fixed–Satellites At Reduced Orbital Spacings and to Revise Application Processing Procedures For Satellite Communications Services*, First Report and Order, 6 FCC Rcd 2806, at ¶ 4 (1991) ("the program would eliminate the issuance of a formal license . . . [which] also would obviate the need for Commission approval of assignments or transfers of control pursuant to Section 310(d) of the Communications Act.").

As the Commission made clear in the 1979 deregulatory Order, there are important policy reasons to reject the claim that receive-only earth station registrants hold Title III licensing rights. One is that under the Act's incentive auction provisions, Section 309(j)(8)(G) requires an operator to hold "licensed spectrum usage rights" to be eligible for incentive payments. A decision that passive receive-only device owners must be paid off before the Commission can reorganize or reallocate a band to promote the public interest, it would have costly, far-reaching and negative implications for future efforts to share or consolidate underutilized spectrum. If the Commission determines that receive-only earth station registrants in C-band possess "licensed spectrum usage rights," the operators of passive receivers in other bands will threaten to litigate over their rights as Title I "licenses" to payouts under Section 309(j)(8).

Moreover, because receive-only earth stations receive their interference protection as a matter of discretion under the Commission's Title I ancillary authority, they also are not subject to the limitations on license modifications adopted under the agency's Section 316 authority. Section 316 puts certain constraints on the Commission's robust authority to modify a "station license" under Title III, affording the licensee written notice and at least 30 days to object.[39] The courts have also determined that a license modification must not represent a "fundamental change" in the licensee's rights.[40] In contrast, since receive-only stations receive interference protection under the Commission's Title I ancillary authority, the Commission can at any time modify the frequencies on which receive-only earth stations receive interference protection.

[39] *See* 47 U.S. Code § 316. The Commission has the authority to modify licenses at any time provided it makes a public interest finding and it does not fundamentally change the license. *See California Metro Mobile Communications Inc. v. FCC*, 365 F.3d 38, 45 (D.C. Cir. 2004) ("Section 316 grants the Commission broad power to modify licenses; the Commission need only find that the proposed modification serves the public interest, convenience and necessity.").

[40] *MCI Telecommunications Corp. v. AT&T*, 512 U.S. 218, 228 (1994) (Section 316 authority to modify licenses does not contemplate 'fundamental changes'); *Cellco Partnership v. FCC*, 700 F.3d 534, 543-544 (D.C. Cir. 2012); *Community Television, Inc. v. FCC*, 216 F.3d 1133, 1140-41 (D.C. Cir. 2000).

The fact that receive-only earth stations do not hold a "station license" as required under Section 316 is ultimately not likely to be relevant here. Even if Section 316 applied to earth station registrations, reducing the range of C-band frequencies in which earth stations are guaranteed interference protection would not represent a "fundamental change" so long as the Commission protects their reliance interests by ensuring they can continue to receive transmissions on other channels.[41] As discussed further in the next section, changing or reducing the frequencies used by a licensed service is a type of modification the Commission has ordered multiple times in the past and just recently proposed again as a means of clearing underutilized 900 MHz band spectrum for auction.[42]

C. FSS Space Stations Can be Consolidated into the Upper Portion of C-band While Maintaining Current Services

Further facilitating a traditional auction and band reorganization here is the fact that the courts have repeatedly upheld the Commission's broad authority under Section 316 to modify FSS space station licenses at any time provided the agency makes a public interest finding and does not fundamentally change the license.[43] Reducing the range of C-band frequencies in which space stations are guaranteed interference protection would not represent a "fundamental

[41] *See Teledesic LLC v. FCC*, 275 F.3d 75, 85-76 (D.C. Cir. 2000) (the Commission only needs to ensure that incumbents will be able to continue to operate).

[42] Notice of Proposed Rulemaking, *Review of the Commission's Rules Governing the 896-901/935-940 MHz Band*, WT Docket No. 17-200 (rel. March 14, 2019). *See also Establishing Rules and Policies for the use of Spectrum for Mobile Satellite Services in the Upper and Lower L-band, Report and Order*, 17 FCC Rcd 2704, ¶¶ 1, 21 (2002) (relocating the Motient spectrum assignment and reducing it from 28 to 20 megahertz); *Improving Public Safety Communications in the 800 MHz Band et al.*, Report and Order,Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order, 19 FCC Rcd 14969, ¶ 68 (2004) (rejecting argument Sprint must be compensated for frequency relocation on a "megahertz-for-megahertz" basis).

[43] *See California Metro Mobile Communications Inc. v. FCC*, 365 F.3d 38, 45 (D.C. Cir. 2004) ("Section 316 grants the Commission broad power to modify licenses; the Commission need only find that the proposed modification serves the public interest, convenience and necessity."); *Cellco Partnership v. FCC*, 700 F.3d 534, 543-544 (D.C. Cir. 2012); *MCI Telecommunications Corp. v. AT&T*, 512 U.S. 218, 228 (1994) (Section 316 authority to modify licenses does not contemplate 'fundamental changes'); *Community Television, Inc. v. FCC*, 216 F.3d 1133, 1140-41 (D.C. Cir. 2000).

change" in their rights, provided that satellite operators are able to continue operating essentially the same service, as the D.C. Circuit has consistently held.[44] Changing or reducing the frequencies used by a licensed service is a type of modification the Commission has ordered multiple times in the past and just recently proposed again as a means of clearing underutilized 900 MHz band spectrum for auction.[45]

For example, in its *2002 MSS Order*, the Commission relied on Section 316 to both relocate and reduce the amount of L-Band spectrum authorized for use by Motient from 28 to 20 megahertz.[46] Likewise, in its *2004 800 MHz Order*, the Commission rejected Sprint's claim that it had to be compensated on a "megahertz-by-megahertz" basis for rebanding to avoid interference with public safety.[47]

The Commission can therefore modify space station licenses to require that subject to certain conditions (e.g., cost reimbursement for "comparable facilities"). After a reasonable transition period their authorization to transmit to earth stations with interference protection could be limited to whatever portion of the band the Commission finds is in the public interest. And, contrary to the claims of satellite operators, there is definitely no requirement that they

[44] *See, e.g., Cellco Partnership v. FCC*, 700 F.3d at 543-544; *Teledesic LLC v. FCC*, 275 F.3d at 85-86. In *Teledesic*, the court rejected the argument that the Commission could not impose the cost of relocating Fixed Service incumbents on satellite entrants benefitting from band segmentation. "'Comparable facilities' does not mean . . . top-of-the-line replacement facilities [but rather] that the replacement facilities are equivalent to the existing [] facilities with respect to throughput, reliability, and operating costs . . ..").

[45] Notice of Proposed Rulemaking, *Review of the Commission's Rules Governing the 896-901/935-940 MHz Band*, WT Docket No. 17-200 (rel. March 14, 2019). *See also Establishing Rules and Policies for the use of Spectrum for Mobile Satellite Services in the Upper and Lower L-band, Report and Order*, 17 FCC Rcd 2704, ¶¶ 1, 21 (2002) ("2002 MSS Order") (relocating the Motient spectrum assignment and reducing it from 28 to 20 megahertz); *Improving Public Safety Communications in the 800 MHz Band et al.*, Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order, 19 FCC Rcd 14969, ¶ 68 (2004) ("2004 800 MHz Order") (rejecting argument Sprint must be compensated for frequency relocation on a "megahertz-for-megahertz" basis).

[46] *2002 MSS Order* at ¶ 19.

[47] *2004 800 MHz Order* at ¶ 32.

agree to the license modification or reduction in total C-band spectrum available to share. As the D.C. Circuit has stated in upholding involuntary license modifications, "if modification of licenses were entirely dependent upon the wishes of existing licensees, a large part of the regulatory power of the Commission would be nullified."[48]

III. The Commission Should Clarify that Incumbent FSS Protection from Interference Applies Only to Spectrum in Actual Use and Sunset the Wasteful Full-Band, Full-Arc Reservation Policy

In our initial comments, OTI and PISC strongly agreed with the Commission's proposal in the *NPRM* stating it is entirely feasible to authorize P2MP fixed wireless to "operate on a secondary basis vis-à vis FSS in any part of the band in which FSS continues to operate during a transition period to accommodate repacking and, thereafter, on a frequency-coordinated basis to protect actual FSS operations."[49] The Commission should authorize P2MP providers to coordinate shared use across the upper 300 megahertz of the band (3900-4200 MHz) – or whatever portion remains in use for FSS – on a first-in licensed basis. PISC further urged the Commission to authorize opportunistic access (e.g., license by rule) by P2MP providers to any unused frequencies in the lower portions of the band until such time as future "flexible use" licensees notify the agency or a frequency coordinator that they are deployed and ready to commence service in a local area.[50] With the benefit of an automated frequency coordination system, this approach can maximize the public interest benefits of the band, promoting enhanced

[48] *People's Broadcasting Co. v. United States*, 209 F.2d 286, 288 (D.C. Cir. 1953). *Accord* Rainbow Broadcasting v. FCC, 949 F.2d 405, 410 (D.C. Cir. 1991) ("Congress broadened the FCC's discretion in § 316, which provides the FCC with the authority to modify licenses without the approval of their holders.").

[49] *NPRM* at ¶ 116.

[50] As in the adjacent CBRS band, if fixed P2MP operators are frequency agile and governed by an automated Part 101 geolocation database, the reallocation of a portion of the band to mobile carriers or any other service (e.g., 3700-3900 MHz) can be accommodated as necessary.

rural connectivity while ensuring protection for both incumbent FSS and future mobile users from harmful interference.

To achieve these benefits, OTI and PISC strongly concurred with the Commission's proposal to end the antiquated "full-band, full-arc" coordination policy that allows FSS earth stations to reserve exclusive use of the entire 3.7 GHz band without regard to actual use.[51] The effective warehousing of vacant spectrum that results from full-band, full-arc coordination violates basic principles of spectrum management, particularly now that mid-band spectrum is scarce and perfectly suited to provide faster and more affordable fixed wireless broadband in underserved areas. We therefore agree with the Commission's tentative conclusion that "for purposes of interference protection, earth station operators will be entitled to protection only for those frequencies, azimuths, and elevation angles and other parameters reported as in regular use (i.e., at least daily) . . .."[52]

In 1970, when the Commission authorized FSS in the band, terrestrial point-to-point (FS) licensees were already operating in the band. The two services are co-primary and co-exist on a coordinated, non-interfering basis. Interference protection is conditioned on registration and, under the Commission's rules, derive from coordination with co-primary FS operations. The rules state: "Interference protection levels are those agreed to during coordination."[53] The Commission's 1970 Report and Order stated that the original coordination rules were designed "to allow for flexibility and growth in both services," and did so by "mak[ing] the assumption that each earth station and each radio relay station within the coordination distance contours

[51] *NPRM* at ¶ 39.
[52] *NPRM* at ¶ 39.
[53] 47 C.F.R. § 25.131(f).

utilizes the entire pertinent frequency band or bands."[54] The 1970 Order made it clear that the goal was robust use of the band by both services: "Applicants should therefore endeavor to find suitable locations for earth stations that present the least amount of potential interference problems."[55]

Under Part 25 of the Commission's rules, C-band space station operators have the right to transmit signals and connect to Commission-authorized earth stations.[56] In section II.B above, we explained that since 1979 the Commission has made it clear that receive-only earth stations do not hold a "license" under Title III.[57] The interference protection granted to receive-only earth stations derive from the Commission's ancillary authority and can be modified at any time. Even if earth stations are deemed to hold the equivalent of a Title III license, Section 316 gives the Commission ample authority to modify both FSS space station licenses and earth station authorizations to advance the public interest in greater spectrum efficiency and in facilitating the deployment of more affordable, high-capacity fixed wireless services in rural and underserved areas. Relegating 'full-band, full-arc' to the dustbin of outdated regulatory rules would have no harmful impact on C-band services and is clearly not a "fundamental change" in the licensed rights of FSS incumbents.[58]

A diverse range of parties, including the Broadband Access Coalition, WISPA and Google, have demonstrated in numerous filings that fixed point-to-multipoint (P2MP) services can coordinate into the band on a localized basis by relying on sectorization and highly

[54] *Establishment of Domestic Satellite Facilities by Nongovernmental Entities*, Report & Order, 22 F.C.C.2d 86, ¶ 35 (1970).
[55] *Ibid*.
[56] *See* 47 C.F.R. § 25.102(a).

[57] *1979 Earth Station Order*, 74 F.C.C.2d 205, at ¶ 31.
[58] *See Cellco Partnership v. FCC*, 700 F.3d 534, 543-544 (D.C. Cir. 2012); *Community Television, Inc. v. FCC*, 216 F.3d 1133, 1140-41 (D.C. Cir. 2000); *Teledesic LLC v. FCC*, 275 F.3d 75, 85-76 (D.C. Cir. 2000) (the Commission only needs to ensure that incumbents will be able to continue to operate).

directional antennas.[59] On July 2 a coalition of rural ISPs and technology companies previewed a Virginia Tech engineering study that validates co-channel sharing by P2MP operations with earth stations as proximate as seven kilometers.[60] More than 80 million Americans, most of them in rural and low-density areas, live within these 'sharing zones' where P2MP can be coordinated on a *co-channel* basis (and more extensively on an adjacent-channel basis).[61] While this coordination can be done manually, it will be even more consistent, accurate and cost-effective if industry stakeholders develop – and the Commission certifies – an automated frequency coordination (AFC) system to enforce interference avoidance.

Since an AFC could be equally effective across the entire 3.7-4.2 GHz band, to leave even a single megahertz vacant in rural areas is a lost opportunity to narrow the digital divide. As Commissioner Michael O'Rielly aptly described what is at stake in this proceeding: "We no longer have the luxury of over-protecting incumbents via technical rules, enormous guard bands, or super-sized protection zones. Every megahertz must be used as efficiently as possible."[62]

[59] *See, e.g.*, Comments of The Broadband Access Coalition, GN Docket No. 17-183 (filed Oct. 2, 2017); Reply Comments of The Broadband Access Coalition, GN Docket No. 17-183 (filed Nov. 15, 2017); Comments of The Broadband Access Coalition at 2-3 ("BAC Comments"); Reply Comments of The Broadband Access Coalition at 8-13, 14-19, 22-33; Comments of Google at 2-10; Comments of Microsoft at 2-4, 9-11; Comments of the Public Interest Spectrum Coalition at 5-12, 12-22.

[60] A summary of the Virginia Tech study, conducted by Reed Engineering, was presented at the National Press Club on July 2, 2019. A video of Dr. Jeffrey Reed's presentation is available here: https://vimeo.com/345824966.

[61] *Ibid*.

[62] Remarks of Commissioner Michael O'Rielly Before the Wi-Fi Alliance Annual Member Meeting (June 4, 2019) at 4.

IV. Conclusion

OTI urges the Commission to take full advantage of this opportunity to reconstitute the C-band to ensure that *all 500 megahertz* of today's grossly underutilized C-band are put to work to boost both America's 5G future as well as to close the rural broadband divide. The clearing and sharing proposals each represent an essential component of a potential win-win-win solution that achieves three vital public interest outcomes: more flexible-use spectrum for 5G, coordinated access to unused mid-band spectrum to fuel more affordable, high-capacity fixed wireless deployments in rural and underserved areas, and both full cost reimbursements and protection from harmful interference for existing FSS incumbents. These three critical policy goals can be accomplished without resort to an unlawful 'private auction' that is contradicted by both the Communications Act and by two relevant legislative precedents. The speediest, most straightforward way to clear spectrum for flexible use is a traditional public auction that consolidates FSS incumbents into the upper portion of the band and requires that auction winners reimburse incumbents for any eligible and reasonable costs.

Respectfully submitted,

<s> Michael Calabrese
Wireless Future Project
Open Technology Institute at New America
740 15th Street NW, Suite 900
Washington, D.C. 20005

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